



Office de la propriété
intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An Agency of
Industry Canada


*Bureau canadien
des brevets
Certification*

*Canadian Patent
Office
Certification*

La présente atteste que les documents
ci-joints, dont la liste figure ci-dessous,
sont des copies authentiques des docu-
ments déposés au Bureau des brevets.

This is to certify that the documents
attached hereto and identified below are
true copies of the documents on file in
the Patent Office.

Specification and Drawings, as originally filed, with Application for Patent Serial No:
2,245,351, on September 8, 1998, by **THE CANADIAN LOUDSPEAKER
CORPORATION**, assignee of Frank Fabian, for "Forced Air Cooling System".


Agent certificateur/Certifying Officer

December 8, 2004

Date

Canada

(CIPO 68)
31-03-04

OPIC  CIPO

THE CANADIAN LOUDSPEAKER CORPORATION

1 of 3 pages

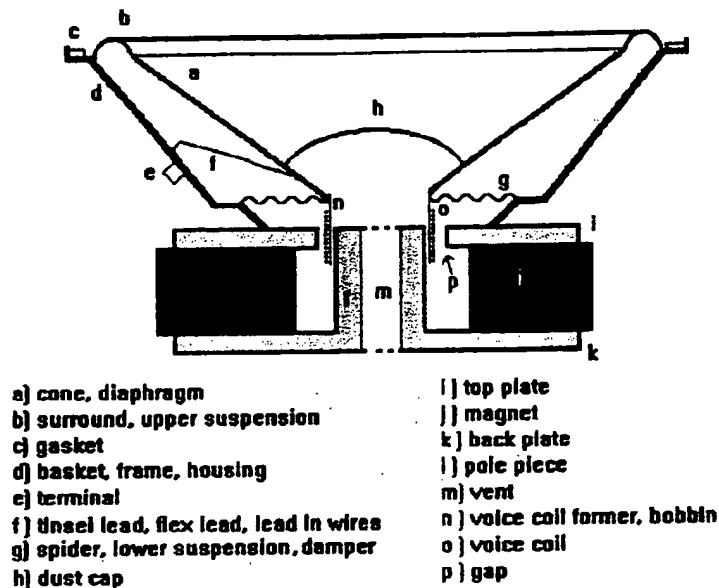
June 13 / 98

RE: PATENT FOR FORCED AIR COOLING SYSTEM.

PATENT APPLICATION FOR FRANK FABIAN

STANDARD MODERN DYNAMIC SPEAKER WITH VENT (M).

FIGURE 1



BEST AVAILABLE COPY

When low frequencies (Bass) are applied to a woofer, the cone moves away from the magnet, or towards the magnet depending on polarity.
The frequency dictates how often per second and a combination of amplitude, or "voltage" and frequency dictate how far the cone will move.

The above standard woofer (FIGURE 1) uses dust-cap (H) to "pump" air through the vent (M). (when high power Bass is applied) It sucks cool air in, and blows air out through the back. This helps cool the "pole-piece" (I).
The pole-piece is sometimes called a "T-yoke".

An extremely small amount of air from under the dust-cap is also forced through the gap between the voice-coil bobbin (n), and the "pole-piece".

The above venting system has been used for many years.

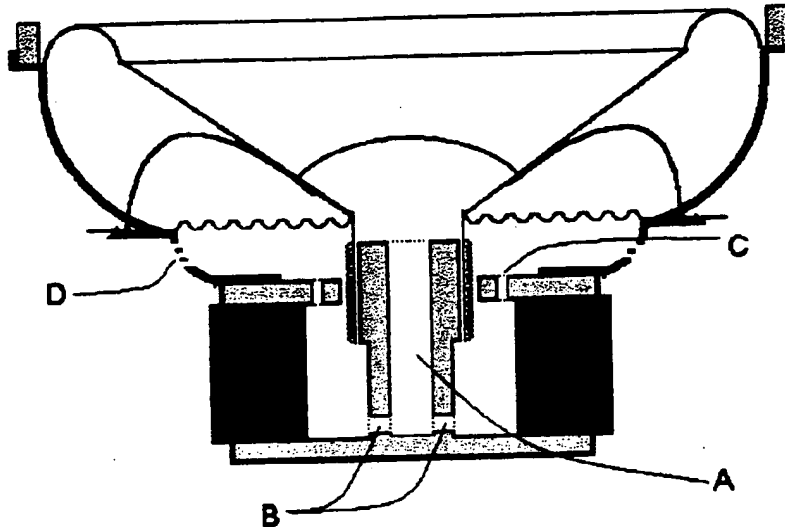
THE CANADIAN LOUDSPEAKER CORPORATION

2 of 3 pages

June 13 / 98

RE: PATENT FOR FORCED AIR COOLING SYSTEM.

FIGURE 2



FORCED AIR COOLING SYSTEM.

The above venting system (FIGURE 2) to be patented. Air is "sucked", and blown through vent "A" in "FIGURE 2" as it is in vent "M" in "FIGURE 1". The difference is that it is NOT sucked and released out the rear of the speaker in the new design.

RE. AIR FLOW:

Air now enters through the basket vents (this can also be done as holes in the spider etc.). The cool air then is sucked through the top-plate vent (C) and also between the voice-coil, and top-plate. This air is the sucked through vent, "B", and then "A".

This new air flow pattern not only cools the pole-piece, but also cools the top-plate. This new design has the ability to allow higher powers of low frequency bass for a longer time than the "standard" design

FERRO-FLUID

The new design "FIGURE 2" also allows for a woofer to use a "ferrous liquid" (Ferro-fluid) in the gap between the voice-coil, top-plate, and pole-piece. The standard "FIGURE A" design will have power compression as air-flow is eliminated under the voice-coil.

The new "FIGURE 2" design eliminated the air-compression, allowing the Ferro-fluid to stay in the magnetic field, and cooling the top-plate so the Ferro-fluid won't get viscous from heat as easily.

1578 Eglinton Ave. W. Toronto Canada M6E 2G8 phone 001-416-782-4451 fax 001-416-782-1757

BEST AVAILABLE COPY

THE CANADIAN LOUDSPEAKER CORPORATION

3 of 3 pages

June 13 / 98

RE: PATENT FOR FORCED AIR COOLING SYSTEM.

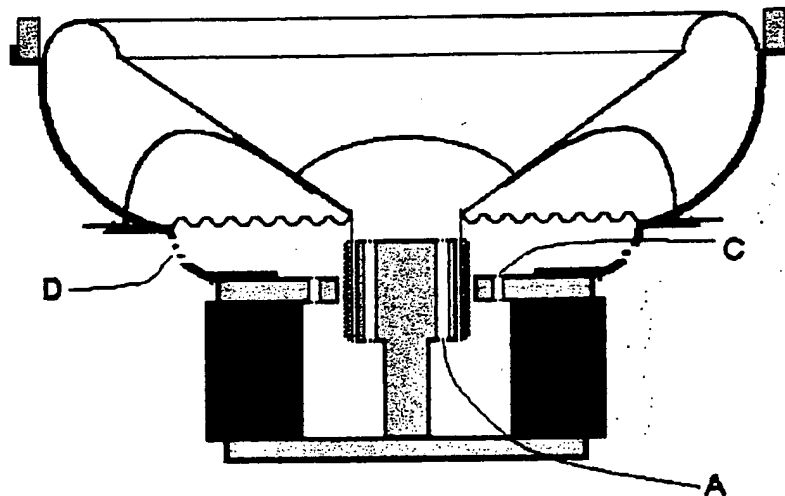
NOTE: This new design can also be done without the top-plate vent "C".

I still want all possibilities patented.

However this will create 1 of 2 problems.

- 1) Noises of air "whistling" as it will be traveling too fast by the voice-coil, between the voice-coil and top-plate.
- 2) If the top-plate "gap" is opened wider to lessen the above noises, the efficiency of the speaker will drop.

FIGURE 3



"FIGURE 3" does the same job as figure 2. It eliminates vent "B", but it allows the same air flow to the needed areas.

I want the patent to cover the following:

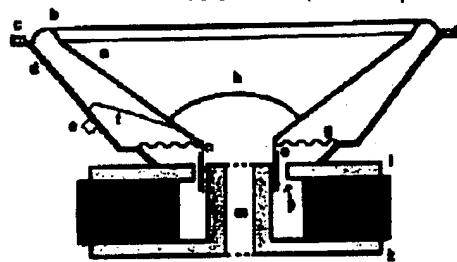
Any way air from under the dust-cap can be used as an air "pump" to cool the top-plate washer, and, or the outer part of the voice coil. The old system "FIGURE 1" did not do that successfully.

Thanks. Please call with any questions. Frank Fabian

1578 Eglinton Ave. W. Toronto Canada M6E 2G8 phone 001-416-782-4451 fax 001-416-782-1757

BEST AVAILABLE COPY

FIGURE 1



- | | |
|---|------------------------------|
| a) cone, diaphragm | i) top plate |
| b) surround, upper suspension | j) magnet |
| c) gasket | k) back plate |
| d) basket, frame, horn | l) pole piece |
| e) terminal | m) vane |
| f) throat lead, line lead, lead in wire | n) voice coil former, bubble |
| g) spider, lower suspension, damper | o) voice coil |
| h) dust cap | p) gap |

BEST AVAILABLE COPY